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Peter Rae Shintani

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08/30/2006

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EXAMINER

BELIVEAU, SCOTT E

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 08/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/760,579

**Applicant(s)**

SHINTANI ET AL.

**Examiner**

Scott Beliveau

**Art Unit**

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Miscellaneous***

1. Please note that the examination art unit of record for this application has changed to 2623.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 July 2005 has been entered.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 2, 4, and 20-27 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicant's further arguments regarding the particular combination of Leak et al. and Mighdoll et al. failing to teach the claimed limitations, the examiner respectfully disagrees. Applicant's argue that the Leak's trigger does not necessarily contain a URL (Argument 1), that the reading of the VBI does not constitute 'scanning' the content (Argument 2), and that the Leak et al. operation of looking for triggers which might contain URLs is not the same as scanning the content for a URL as required by the claims (Argument 3).

As argued by applicants, Leak et al. examines data transmitted over the VBI for triggers that might contain a URL. It is subsequently argued that Leak et al. scans for triggers but does not scan for URLs -- as further supported in the illustrative table. The examiner respectfully disagrees. As previously set forth in the Final rejection, the instant application is utterly silent with respect to what if anything is involved in 'scanning' in order to locate a URL nor the specification provide any disclosure regarding the particular scenarios and corresponding 'Results of Applicant'. Applicants further submit that the term 'scanning' should be attributed to its ordinary meaning namely, "to examine closely", "to look over rapidly by thoroughly by moving from one point to the other" and "to search . . . automatically for specific data". In essence, while fundamental differences might exist between the process performed by Leak et al. and the purported 'scanning' process actually performed by applicant's invention, the specification is simply silent with respect to what is actually involved in 'scanning' over and above its common usage meaning so as to conclude that the Leak et al. 'scanning' is not similar to the claimed 'scanning'.

As noted in applicant's arguments, the Leak et al. reference clearly anticipates a scenario wherein a 'trigger' comprises a 'URL'. Section 1.15 of the explicitly incorporated by reference ATVEF specification further sets forth that triggers always include a URL. The 'trigger' and associated 'URL' are a part of the video program by being distributed in closed captioning data channel or VBI Line 21 or alternatively both the Leak et al. reference (Col 11, Lines 33-40) and the ATVEF specification (Section 3) teach that triggers may be sent as part of digital television programming. Accordingly, the Leak et al. system in locating a

'trigger' further 'searches . . . automatically for specific data' namely a 'URL' in order to determine what web based content to actually cache, thereby meeting the claimed limitation.

With respect to applicant's further arguments regarding the failure of the references to perform a 'mirroring function', the examiner respectfully disagrees. Taken in combination, the Internet proxy residing at the 'digital television service provider' [605] of Leak et al. has been modified to comprise the caching and 'mirroring functionality' of Mighdoll et al. As argued, the Mighdoll et al. reference discloses the particular usage of 'transcoding' in association with the particular proxy cache [65]. The 'transcoding' is disclosed to be limited to only portions of the code associated with the original document (Col 7, Lines 7-10).

Therefore, Mighdoll et al. system carries out a 'mirroring function' for at least a portion of the original content associated with the URL or else the whole purpose of the 'caching' the content would be moot. The particularly argued 'mirroring function' does not require for any particular degree to which the content need be duplicated in order to be considered 'mirrored'. For example, as is understood in the art, web-content may still be considered to be mirrored even though it is in a different language from the original copy (Ex. Spanish language mirror).

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
6. Claims 1, 6, 7-10, 14-16, 24, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leak et al. (US Pat No. 6,668,378) in view of Mighdoll et al. (US Pat No. 5,918,013).

In consideration of claims 1 and 6, the Leak et al. reference discloses a “method carried out by a digital television service provider for providing enhanced performance in an interactive television system” (Col 11, Lines 33-40) though pre-fetching and caching interactive content associated with a broadcast program. The method comprises “scanning an interactive content bearing program for a universal resource locator (URL)” associated with a broadcast trigger whereupon “finding a URL in the interactive content bearing program”, the system “mirrors content associated with the URL to a cache memory . . .” such as that associated with the local receiver or set-top box which may or may not be capable of connecting to the Internet (Figures 8 and 9; Col 7, Lines 53-63; Col 10, Lines 30 – 32). Subsequently, while “presenting the interactive content bearing program to a plurality of subscribers”, the receivers are operable to “receive a request from a subscriber for the URL” (ex. that associated with an order form or online magazine) whereupon the “mirrored

content associated with the URL” is “retrieved” from a cache memory associated with the set-top and “delivered” to the subscriber.

While a “cache memory” is considered to be inherently “situated at [the] service provider head end” [605] of Leak et al. as necessary for the retrieval and decoding of web pages for subsequent broadcast, it is unclear if the content associated with the URL is necessarily stored for subsequent retrieval by client units which deem the received mirrored content to be inadequate as set forth in Zigmond et al. (‘392) (Figures 3 and 6), expressly incorporated by reference. In an analogous art pertaining to interactive television distribution, the Mighdoll et al. reference discloses the advantageous usage of a remotely located “cache memory” or proxy server [5] that facilitates the retrieval requested documents requested from the Internet by a WebTV® terminal whereupon the server “receives a request from a subscriber for [a] URL; retrieves the mirrored content associated with the URL from the cache memory upon receipt of the request; and delivers the mirrored content associated with the URL . . . to the subscriber requesting the URL” (Figure 5; Col 4, Line 41 – Col 5, Line 15; Col 5, Lines 31-65). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the “digital television service provider facility” [605] of Leak et al. such that “upon finding a URL in the interactive content bearing program, mirroring content associated with the URL to a cache memory residing at a digital television service provider . . . [and further] delivering the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” for the purpose of advantageously reducing latency associated with retrieving documents from the Internet that are expected to be frequently requested by clients by nature of being

associated with a broadcast program (Mighdoll et al.: Col 1, Line 54 – Col 2, Line 6). For example, taken in combination, a trigger is received by the “service provider head end” [605] and its associated content is retrieved and cached both locally and remotely such that the content is quickly retrievable by Internet capable clients from a remote cache and is transcoded for broadcast delivery and local caching for both Internet and non-Internet capable receivers.

Claims 10 and 14 are rejected in view the aforementioned combination of references as previously discussed wherein the Leak et al. system has been modified to further comprise the “cache memory” [5] of Mighdoll et al. residing at the “digital television service provider site” [605] of Leak et al. As previously set forth, the Leak et al. reference discloses a “program means running on a programmed processor” associated with the uplink station [605] or “media server residing at the digital television service provider site for presenting the interactive content bearing program to a plurality of subscribers” for providing a means to implement the “scanning” and “mirroring” (Leak et al.: Col 12, Lines 3-5).

While a “cache memory” is considered inherently “situated at [the] service provider head end” [605] of Leak et al. as necessary for the retrieval and decoding of web pages for subsequent broadcast, it is unclear if the content associated with the URL is necessarily stored for subsequent retrieval by client units which deem the received mirrored content to be inadequate as set forth in Zigmond et al. (‘392) (Figures 3 and 6), expressly incorporated by reference. The Mighdoll et al. reference discloses the advantageous usage of a remotely located “cache memory” or proxy server [5] which “mirrors content associated with [a] URL to the cache memory”, provides “means for receiving a request from a subscriber for the



Art Unit: 2623

URL; means for retrieving the mirrored content associated with the URL from the cache memory; and means for delivering the mirrored content associated with the URL to the subscriber requesting the URL” (Figure 5; Col 4, Line 41 – Col 5, Line 15); Col 5, Lines 31-65). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the “digital television service provider facility” [605] of Leak et al. such that “upon finding a URL in the interactive content bearing program, mirroring content associated with the URL to a cache memory. . . [and further] delivering the mirrored content associated with the URL to the subscriber requesting the URL” for the purpose of advantageously reducing latency associated with retrieving documents from the Internet that are expected to be frequently requested by clients by nature of being associated with a broadcast program (Mighdoll et al.: Col 1, Line 54 – Col 2, Line 6). For example, taken in combination, a trigger is received by the “service provider head end” [605] and its associated content is retrieved and cached both locally and remotely such that the content is quickly retrievable by Internet capable clients from a remote cache and is transcoded for broadcast delivery and local caching for both Internet and non-Internet capable receivers.

Claim 24 is rejected in view of the aforementioned combination of references wherein the method of claim 1 is operable to be implemented via a “processor” associated with a “storage medium storing instructions” (Leak et al.: Col 12, Lines 3-5).

Claim 7 is rejected in light of the combination of references wherein the Mighdoll et al. reference discloses that “delivering is carried out by transmitting the mirrored content to the subscriber requesting the URL” using a modem pool consisting of any type of modem (Mighdoll et al: Col 3, Lines 35-64). The Leak et al. reference discloses that the receivers

Art Unit: 2623

are operable to retrieve Internet content using a “cable modem” (Leak et al.: Col 4, Line 64 – Col 5, Line 6).

Claims 8 and 26 are rejected wherein the system “determines that the URL requested by the subscriber is not in the cache memory” and subsequently “downloads the interactive content associated with the URL from the Internet” (Mighdoll et al.: Figure 6).

Claims 9, 16, and 27 are rejected wherein the combined references are operable to “examine the content associated with the URL for a secondary URL and mirror content associated with the secondary URL to the cache memory” (Leak et al.: Col 9, Lines 1-44).

Claim 15 is rejected wherein “[a] cache memory is situated at a subscriber’s set-top box” (Leak et al.: Figures 8 and 9) (Zigmond et al.: Figure 4; Col 5, Line 47 – Col 6, Line 14).

7. Claims 2, 4, 5, 11-13, 17-23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leak et al. (US Pat No. 6,668,378), in view of Mighdoll et al. (US Pat No. 5,918,013), and in further view of Arlitt et al. (US Pat No. 6,272,598)..

In consideration of claims 2, 4, 11, 12, and 25, the combined references do not particularly disclose the usage of a “purging algorithm” for use in the “service provider head end” based proxy server. In an analogous art related to web page caching, the Arlitt et al. reference discloses a method for “purging the cache memory in accordance with a purging algorithm . . . [based on] an amount of time the mirrored content has been in the cache memory” or “in accordance with a least frequent use algorithm” (Col 5, Line 58 – Col 6, Line 12). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined references to further utilize a

“purging algorithm” as taught by Arlitt et al. for the purpose of providing a flexible means for managing the limited storage capacity of a proxy cache (Arlitt et al.: Col 2, Lines 10-54).

Claims 5 and 13 are rejected wherein the “purging algorithm” is performed “in accordance with an order that the mirrored content was placed in the cache” (Arlitt et al.: Col 6, Lines 42-55). For example, assume that a content item that was originally placed in the cache 2 weeks prior to another item wherein all other factors associated with the content items are equal and neither page was revisited. The system would, subsequently, purge the first item prior to the second item based on the order that the mirrored content was placed in the cache.

Regarding claim 17, the claim sets forth all of the claimed limitations of claim 1 and is subsequently rejected as previously discussed with respect to claim 1. The claim further sets forth the particular usage of a ‘purging algorithm’ which is not disclosed by the combination of Leak et al. and Mighdoll et al.. As previously discussed, the Arlitt et al. reference discloses a method for “purging the cache memory in accordance with a purging algorithm . . . [based on] an amount of time the mirrored content has been in the cache memory” (Col 5, Line 58 – Col 6, Line 12). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made so as to modify the combined references so as to further utilize a “purging algorithm” as taught by Arlitt et al. for the purpose of providing a flexible means for managing the limited storage capacity of a proxy cache (Arlitt et al.: Col 2, Lines 10-54).

Claims 18 and 19 are rejected in light of the aforementioned combined teachings wherein the “mirroring further comprises mirroring the content associated with the URL to a local

cache memory situated at a subscriber's set-top box" (Leak et al.: Figure 8) (Zigmond et al.: Figure 4; Col 5, Line 47 – Col 6, Line 14). Accordingly, the "retrieving" comprises, initially using the "local cache", wherein if the content is not there, the request is sent further upstream to the service provider headend "cache memory" or proxy and finally "downloads the interactive content associated with the URL from the Internet" if it is not currently cached at the proxy (Zigmond et al.: Figures 3 and 6; Mighdoll et al.: Figure 6).

Claim 20 is rejected wherein the combined references are operable to "examine the content associated with the URL for a secondary URL and mirror content associated with the secondary URL to digital television service provider headend cache memory" [605] (Leak et al.: Col 9, Lines 1-44).

In consideration of claim 21, as previously discussed, the Leak et al. reference discloses a "method of providing enhanced performance in an interactive television system" though pre-fetching and caching interactive content associated with a digital television broadcast program (Col 11, Lines 33-40). The method comprises "scanning an interactive content bearing program for a universal resource locator (URL)" associated with a broadcast trigger whereupon "finding a URL in the interactive content bearing program", the system "mirrors content associated with the URL to a cache memory" associated with the local receiver or "set-top box" (Figure 8; Col 10, Lines 30 – 32). Subsequently, while "presenting the interactive content bearing program to a plurality of subscribers", the receiver is operable to "receive a request form a subscriber for the URL" (ex. that associated with an order form or online magazine) whereupon the "mirrored content associated with the URL" is "retrieved"

Art Unit: 2623

from the “cache memory . . . situated at a subscriber’s set-top box” or the Internet (ex. Zigmond et al. (‘392)) and “delivered” to the subscriber display.

The reference, however, does not disclose nor preclude the further “caching” of the retrieved “content associated with the URL to a cache memory situated at a digital television service provider head end” that acts as a Internet proxy for downstream clients. In an analogous art related interactive television distribution, the Mighdoll et al. reference discloses the advantageous usage of a remotely located “cache memory” to facilitate the retrieval of WebTV® terminal or client requested documents (Col 4, Line 41 – Col 5, Line 15). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the “digital television service provider facility” [605] of Leak et al. such that “upon finding a URL in the interactive content bearing program, mirroring content associated with the URL to a cache memory situated at a digital television service provider and a local cache memory situated at a subscriber’s set-top box. . . [and further] delivering the mirrored content associated with the URL to the subscriber requesting the URL” for the purpose of advantageously reducing latency associated with retrieving documents from the Internet that are expected to be frequently requested by clients by nature of being associated with a broadcast program (Mighdoll et al.: Col 1, Line 54 – Col 2, Line 6). For example, taken in combination, a trigger is received by the “service provider head end” [605] and its associated content is retrieved and cached both locally and remotely such that the content is quickly retrievable by Internet capable clients from a remote cache and is transcoded for broadcast delivery and local caching for both Internet and non-Internet capable receivers.

As aforementioned, the combined references do not particularly disclose the usage of a “purging algorithm” for use in a proxy server such as the “server provider head end”. In an analogous art related to web page caching, the Arlitt et al. reference discloses a method for “purging the cache memory in accordance with a purging algorithm . . . [based on] an amount of time the mirrored content has been in the cache memory” (Col 5, Line 58 – Col 6, Line 3). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined references so as to further utilize a “purging algorithm” as taught by Arlitt et al. for the purpose of providing a flexible means for managing the limited storage capacity of a proxy cache (Arlitt et al.: Col 2, Lines 10-54).

Claim 22 is rejected as aforementioned wherein the system “determines that the URL requested by the subscriber is not in the cache memory and the local cache memory” and subsequently “downloads the interactive content associated with the URL from the Internet” (Zigmond et al.: Figure 3; Mighdoll et al.: Figure 6).

Claim 23 is rejected wherein the combined references are operable to “examine the content associated with the URL for a secondary URL and mirror content associated with the secondary URL to the cache memory” (Leak et al.: Col 9, Lines 1-44).

8. Claims 1, 6, 7, 10, 14, 15, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder et al. (US Pat No. 6,253,238 B1) in view of Kunkel et al. (US Pat No. 5,961,603).

Regarding claim 1, the Lauder et al. reference discloses a “method carried out by a digital television service provider” (Figure 1; Col 4, Lines 41-55) for “providing enhanced performance in an interactive television system” (Col 3, Lines 47-61). The method

comprises “scanning an interactive content bearing program for a universal resource locator” (Col 14, Line 59 – Col 15, Line 44). While the reference ‘finds’ and stores the ‘URL’ from the video content, the reference is unclear with respect to subsequent actions such as the ‘mirroring’ of the content as claimed.

In an analogous art pertaining to interactive video programs, the Kunkel et al. reference discloses a system and method that “mirrors content associated with [a] URL to a cache memory” [31] “residing at a digital television service provider facility” [14], “presenting the interactive content bearing program to a plurality of subscribers; receiving a request from a subscriber for the URL; retrieving the mirrored content associated with the URL from the cache memory upon receipt of the request; and delivering the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” (Col 12, Line 45 – Col 13, Lines 38). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lauder et al. such that “upon finding a URL in the interactive content bearing program, mirroring content associated with the URL to a cache memory residing at a digital television service provider facility . . . . [and to subsequently] deliver the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” for the purpose of providing the user of an interactive program with the ability to rapidly associated/linked information from the Internet (Kunkel et al.: Col 2, Lines 18-22).

Claim 6 is rejected wherein the “cache memory is situated at a television service provider head end” (Kunkel et al.: Col 6, Lines 33-56).

In consideration of claim 7, the combined references are silent with respect to the “delivering [being] carried out by transmitting the mirrored content to the subscriber requesting the URL via a cable modem”. The examiner takes OFFICIAL NOTICE as to the existence of “cable modems” and their usage in the video distribution art to deliver internet based content to subscribers. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined references to “deliver . . . the mirrored content to the subscriber requesting the URL via a cable modem” for the purpose of advantageously enhancing the transmission rate of the mirrored content.

Claim 10 is rejected as previously discussed wherein the Lauder et al. reference discloses an “apparatus residing at a digital television service provider site” (Figure 1; Col 4, Lines 41-55) for “providing enhanced performance in an interactive television system” (Col 3, Lines 47-61). The “apparatus” [12] comprises a “program means running on a programmed processor residing at the digital television service provider site for scanning an interactive content bearing program for a universal resource locator” (Col 14, Line 59 – Col 15, Line 44). While the reference ‘finds’ and stores the ‘URL’ from the video content, the reference is unclear with respect to subsequent actions such as the ‘mirroring’ of the content as claimed.

In an analogous art pertaining to interactive video programs, the Kunkel et al. reference discloses an “apparatus” [10] comprising a “cache memory residing at the digital television service provider site” [31] and a “program means running on a programmed processor residing at the digital television service provider site for: . . . mirroring content associated with [a] URL to a cache memory” [31] “residing at a digital television service provider



facility” [14]” The “apparatus” [10] further comprises a “media server” [89] “residing at the digital television service provider site for presenting the interactive content bearing program to a plurality of subscribers”, “means for receiving a request from a subscriber for the URL” [88], “means for retrieving the mirrored content associated with the URL from the cache memory” [54], and “means for delivering the mirrored content associated with the URL to the subscriber requesting the URL” [16] (Col 12, Line 45 – Col 13, Lines 38). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lauder et al. such that “upon finding a URL in the interactive content bearing program, mirroring content associated with the URL to the cache memory . . . . [and to subsequently] deliver the mirrored content associated with the URL to the subscriber requesting the URL” for the purpose of providing the user of an interactive program with the ability to rapidly associated/linked information from the Internet (Kunkel et al.: Col 2, Lines 18-22).

Claim 14 is rejected wherein the “cache memory is situated at a television service provider head end” (Kunkel et al.: Col 6, Lines 33-56).

Claim 15 is rejected wherein the ‘apparatus’ [10] further comprises an “additional cache memory” [100] “situated at a subscriber’s set-top box” [20] (Kunkel et al.: Col 8, Lines 39-44).

Claim 24 is rejected as previously discussed in light of the combined teachings. In particular, the Lauder et al. reference discloses a “storage medium storing instructions which when executed on a programmed processor residing at a digital television service provider” (Figure 1; Col 4, Lines 41-55) “carry out a method of providing enhanced performance in an

interactive television system” (Col 3, Lines 47-61). The method comprises “scanning an interactive content bearing program for a universal resource locator” (Col 14, Line 59 – Col 15, Line 44). While the reference ‘finds’ and stores the ‘URL’ from the video content, the reference is unclear with respect to subsequent actions such as the ‘mirroring’ of the content as claimed.

In an analogous art pertaining to interactive video programs, the Kunkel et al. reference discloses a system and method that “mirrors content associated with [a] URL to a cache memory” [31] “residing at a digital television service provider facility” [14], “presenting the interactive content bearing program to a plurality of subscribers; receiving a request from a subscriber for the URL; retrieving the mirrored content associated with the URL from the cache memory upon receipt of the request; and delivering the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” (Col 12, Line 45 – Col 13, Lines 38). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lauder et al. such that “upon finding a URL in the interactive content bearing program, mirroring content associated with the URL to a cache memory residing at a digital television service provider facility . . . [and to subsequently] deliver the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” for the purpose of providing the user of an interactive program with the ability to rapidly associated/linked information from the Internet (Kunkel et al.: Col 2, Lines 18-22).

Art Unit: 2623

9. Claims 2, 4, 5, 11-13, 17, 18, 21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder et al. (US Pat No. 6,253,238 B1), in view of Kunkel et al. (US Pat No. 5,961,603), and in further view of Arlitt et al. (US Pat No. 6,272,598 B1).

In consideration of claims 2, 4, 11, 12, and 25, the combined references are silent with respect to the usage of a “purging algorithm” in association with the “cache memory” [31] of Kunkel et al.. In an analogous art related to web page caching, the Arlitt et al. reference discloses a method for “purging the cache memory in accordance with a purging algorithm . . . [based on] an amount of time the mirrored content has been in the cache memory” or “in accordance with a least frequent use algorithm” (Col 5, Line 58 – Col 6, Line 12).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the “cache memory” of the combined references to further utilize a “purging algorithm” as taught by Arlitt et al. for the purpose of providing a flexible means for managing the limited storage capacity of a proxy cache (Arlitt et al.: Col 2, Lines 10-54).

Claims 5 and 13 are rejected wherein the “purging algorithm” is performed “in accordance with an order that the mirrored content was placed in the cache” (Arlitt et al.: Col 6, Lines 42-55). For example, assume that a content item that was originally placed in the cache 2 weeks prior to another item wherein all other factors associated with the content items are equal and neither page was revisited. The system would, subsequently, purge the first item prior to the second item based on the order that the mirrored content was placed in the cache.

Claim 17 is rejected in light of the combined teachings as previously set forth. In particular, the Lauder et al. reference discloses a “method carried out by a digital television service provider” (Figure 1; Col 4, Lines 41-55) for “providing enhanced performance in an interactive television system” (Col 3, Lines 47-61). The method comprises “scanning an interactive content bearing program for a universal resource locator” (Col 14, Line 59 – Col 15, Line 44). While the reference ‘finds’ and stores the ‘URL’ from the video content, the reference is unclear with respect to subsequent actions such as the ‘mirroring’ of the content as claimed.

In an analogous art pertaining to interactive video programs, the Kunkel et al. reference discloses a system and method that “mirrors content associated with [a] URL to a cache memory” [31] “residing at a digital television service provider facility” [14], “presenting the interactive content bearing program to a plurality of subscribers; receiving a request from a subscriber for the URL; retrieving the mirrored content associated with the URL from the cache memory upon receipt of the request; and delivering the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” (Col 12, Line 45 – Col 13, Lines 38). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lauder et al. such that “upon finding a URL in the interactive content bearing program, mirroring content associated with the URL to a cache memory residing at a digital television service provider facility . . . [and to subsequently] deliver the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” for the

purpose of providing the user of an interactive program with the ability to rapidly associated/linked information from the Internet (Kunkel et al.: Col 2, Lines 18-22).

As previously discussed, the combined references are silent with respect to the further usage of a “purging algorithm” in association with the “cache memory” [31] of Kunkel et al.. In an analogous art related to web page caching, the Arlitt et al. reference discloses a method for “purging the cache memory in accordance with a purging algorithm . . . [based on] an amount of time the mirrored content has been in the cache memory” (Col 5, Line 58 – Col 6, Line 12). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made so as to modify the “cache memory” [31] to further “purge the cache memory in accordance with a purging algorithm, wherein the purging algorithm purges the cache in accordance with an amount of time the mirrored content has been in the cache memory” for the purpose of providing a flexible means for managing the limited storage capacity of a proxy cache (Arlitt et al.: Col 2, Lines 10-54).

Claim 18 is rejected wherein the “mirroring further comprises mirroring the content associated with the URL to a local cache memory” [100] “situated at a subscriber’s set-top box” [20] (Kunkel et al.: Col 8, Lines 39-44) wherein the “retrieving comprises retrieving the content associated with the URL to one of the digital television service provider headend cache memory” as previously set forth.

Claim 21 is rejected in light of the combined teachings as previously set forth. In particular, the Lauder et al. reference discloses a “method carried out by a digital television service provider” (Figure 1; Col 4, Lines 41-55) for “providing enhanced performance in an interactive television system” (Col 3, Lines 47-61). The method comprises “scanning an

Art Unit: 2623

interactive content bearing program for a universal resource locator” (Col 14, Line 59 – Col 15, Line 44). While the reference ‘finds’ and stores the ‘URL’ from the video content, the reference is unclear with respect to subsequent actions such as the ‘mirroring’ of the content as claimed.

In an analogous art pertaining to interactive video programs, the Kunkel et al. reference discloses a system and method that “mirrors content associated with [a] URL to a cache memory” [31] “residing at a digital television service provider facility” [14] and a “local cache memory” [100] “situated at a subscriber’s set-top box” [20], “presenting the interactive content bearing program to a plurality of subscribers; receiving a request from a subscriber for the URL; retrieving the mirrored content associated with the URL from the cache memory upon receipt of the request; and delivering the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” (Col 12, Line 45 – Col 13, Lines 38). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Lauder et al. such that “upon finding a URL in the interactive content bearing program, mirroring content associated with the URL to a cache memory residing at a digital television service provider headend and a local cache memory situated at a subscriber’s set-top box . . . [and to subsequently] deliver the mirrored content associated with the URL from the digital television service provider facility to the subscriber requesting the URL” for the purpose of providing the user of an interactive program with the ability to rapidly associated/linked information from the Internet (Kunkel et al.: Col 2, Lines 18-22).

As previously discussed, the combined references are silent with respect to the further usage of a “purging algorithm” in association with the “cache memory” [31] of Kunkel et al.. In an analogous art related to web page caching, the Arlitt et al. reference discloses a method for “purging the cache memory in accordance with a purging algorithm . . . [based on] an amount of time the mirrored content has been in the cache memory” (Col 5, Line 58 – Col 6, Line 12). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made so as to modify the “cache memory” [31] to further “purge the cache memory in accordance with a purging algorithm, wherein the purging algorithm purges the cache in accordance with an amount of time the mirrored content has been in the cache memory” for the purpose of providing a flexible means for managing the limited storage capacity of a proxy cache (Arlitt et al.: Col 2, Lines 10-54).

10. Claims 8, 9, 15, 16, 23, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder et al. (US Pat No. 6,253,238 B1), in view of Kunkel et al. (US Pat No. 5,961,603), and in further view of Klemm (US Pat No. 6,993,591).

In consideration of claims 8 and 26, the combined references are silent with respect to further “determining that the URL requested by the subscriber is not in the cache memory, and downloading the interactive content associated with the URL from the Internet”. In an analogous art relating the caching of interactive content, the Klemm reference discloses a caching algorithm that “determines that [a] URL requested by the subscriber is not in the cache memory, and downloading the interactive content associated with the URL from the Internet” (Col 1, Lines 23-40; Col 4, Lines 43-61). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

combined references such that the system further “determines that the URL requested by the subscriber is not in the cache memory, and [subsequently] downloads the interactive content associated with the URL from the Internet” for the purpose of providing a means to ensure that requested content can be quickly received while reducing the resource overhead associated with prefetching algorithms (Klemm: Col 1, Line 15 – Col 2, Line 21).

Claims 9, 16, 23, and 27 are rejected in light of the teachings of Klemm wherein the associated improvement of the prefetching algorithm further “examines the content associated with the URL for a secondary URL; and mirrors content associated with the secondary URL to the cache memory” (Klemm: Col 6, Lines 1-11).

Claims 19, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lauder et al. (US Pat No. 6,253,238 B1), in view of Kunkel et al. (US Pat No. 5,961,603), in view of Arlitt et al. (US Pat No. 6,272,598 B1), and in further view of Klemm (US Pat No. 6,993,591). In an analogous art relating the caching of interactive content, the Klemm reference discloses a caching algorithm that “determines that [a] URL requested by the subscriber is not in [a] cache memory, and downloading the interactive content associated with the URL from the Internet” (Col 1, Lines 23-40; Col 4, Lines 43-61). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined references such that the system further “determines that the URL requested by the subscriber is not in the digital television service provider headend cache memory and the local cache memory, and [subsequently] downloading the interactive content associated with the URL from the Internet” for the purpose of providing a means to



Art Unit: 2623

ensure that requested content can be quickly received while reducing the resource overhead associated with prefetching algorithms (Klemm: Col 1, Line 15 – Col 2, Line 21).

Claim 20 is rejected in light of the teachings of Klemm wherein the associated improvement of the prefetching algorithm further “examines the content associated with the URL for a secondary URL; and mirrors content associated with the secondary URL to the cache memory” (Klemm: Col 6, Lines 1-11).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as follows. Applicant is reminded that in amending in response to a rejection of claims, the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objections made.

- The ATVEF Specification (version 1.1r26) discloses the particular content format and delivery mechanisms that provide for enhanced television experiences.
- The O'Brien et al. (US Pat No. 6,055,569) reference discloses a system and method for accelerating web access by predicting user actions and caching associated web pages.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Beliveau whose telephone number is 571-272-7343.

The examiner can normally be reached on Monday-Friday from 8:30 a.m. - 6:00 p.m..

Art Unit: 2623

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Miller can be reached on 571-272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



SEB

August 28, 2006

Scott Beliveau  
Primary Examiner  
Art Unit 2623